United States Department of Agriculture
Bureau of Biological Survey
---
Wildlife Research and Management Leaflet BS-92

Washington, D. C. * May 1937

# THE AMERICAN CHAMELEON AND ITS CARE

Prepared in the Section of Food Habits, Division of Wildlife Research

---

## Introduction

The American chameleon (Anolis carolinensis) has a larger distribution as a pet or curio than any other reptile in the United States. Circuses and road shows, as well as regular pet dealers, sell large numbers of these lizards to the public, so that there is a continual popular demand for information about them. This leaflet has been prepared in response to the numerous inquiries on this subject.

## Range

The genus Anolis has a wide range throughout southern United States, Mexico, tropical South America, and the West Indies. The range of A. carolinensis extends from North Carolina to Florida and west through the Gulf Region to the Rio Grande. A closely related species, A. stejnegeri, occurs at Key West, Fla.

## Description

The American chameleon (Anolis carolinensis) belongs to the family Iguanidae. It is not closely related to the true chameleons (Chamaeleontidae) found in Africa, Madagascar, and eastward to India and Ceylon, but it derives its name from a trait it has in common with them, that of changing its body hues. It may be distinguished from all other North American lizards, except the geckos, by the expanded and flattened adhesive pads on the middle joints of the toes. Its body is covered with minute, slightly ridged scales. Larger scales protect the head, portions of the under side of the neck, and the long slender tail, and those on the tail are conspicuously keeled. Adults are usually about 7 inches in length, and the females average somewhat smaller than the males.

The color of the chameleon normally is confined to shades of green or brown, with an occasional spotting of black, but it may vary in response to temperature, or to the presence or absence of light, or possibly to other factors, from slaty gray, straw yellow, and different shades of brown to emerald green. The color is not influenced by that of the object upon which

the chameleon rests. In the darker color phases there is usually a mottled pale band on the back, but this dorsal stripe may appear as brick red, pink, white, or black. When sleeping and when fighting with its fellows the chameleon invariably is pale green, with the abdomen immaculate white; in moments of excitement the gular pouch is either purplish or brilliant red. An individual may fade from dark, rich brown to pale leaf-green in less than 3 minutes. During these color changes the varying hues are striking; the brown gives way to beautiful golden yellow; and this, in turn, may fade into slaty gray or emerald green with a general peppering of white; or light turquoise blue dots may appear on the back. At death, the color is usually green, with scattered patches of black.

According to recent research, the color changes in Anolis depend on the reciprocal physical action of four layers of skin: The epidermis, the yellow oil droplet layer, the leucophore layer, and the melanophore layer. A particular color is due to the degree of light interference and absorption, made possible chiefly by migration of pigment granules in the last-mentioned layer and by dilation of minute blood vessels.

## Activity and Food Habits

Chameleons are strictly diurnal and under natural conditions normally spend the night sleeping in a horizontal position, concealed among vegetation. They are most active on warm, sunny days, when rival males may frequently be observed in strenuous combats that often end with the vanquished losing a portion of his brittle tail.

Chameleons have been noted in considerable numbers feeding on destructive caterpillars and moths (celery-leaf tiers and loopers) that infest the Florida celery fields. It is probable that they are of considerable value around the brush-bordered fields of various other truck crops in the Southeastern and Gulf States.

Captive specimens shed their skin several times during a summer season, and, according to some authorities, they invariably eat the cast-off epidermal layer.

## Breeding Habits

Eggs of the American chameleon average a little less than 1/2 by 1/4-inch and are generally laid in "sets" of only one or two. They have a leathery, dull white coat that soon becomes stained by the surrounding materials. J. M. Kelly reported that during the latter half of June each of nine females that had been captured in southern Louisiana and shipped to Chicago dug a hole in the moist sawdust on the bottom of the cage, laid a single egg, and covered it. The eggs were removed by the person in charge and placed between moist layers of sphagnum moss. After being subjected to the variable summer temperatures, eight of the nine eggs hatched in 44 to 47 days. The remaining egg failed to develop. The young were all the same size, measuring 2 inches from the tip of the nose to the end of the tail. They were active as soon as they

emerged and shed their skins in a few minutes. They refused to feed but drank water. Practical propagation of these reptiles in captivity has not yet been achieved.

## Care

No definite information is at hand regarding the age reached by chameleons under natural conditions. Under artificial conditions the length of life depends largely on healthy surroundings and proper care. Many captive chameleons starve or die from thirst. Owners should see that their pets are not neglected. At the National Zoological Park, captive specimens have been kept for at least 10 months.

In summer, chameleons may have the run of a screened porch, where they prove useful in capturing and destroying flies, ants, and other insects, but during the winter a cage should be provided. A box, preferably one at least 2 or 3 feet long, placed where it will receive plenty of sunlight may be used. The open face should be covered with a pane of glass, mosquito netting, or a fine-meshed wire screening.

A small, shallow bowl containing a water hyacinth (Eichhornia), a Chinese sacred lily (Narcissus), or some other water plant should be placed inside the cage and a little water sprayed over its leaves at least once each day, as chameleons normally procure what water they require by lapping up with their thick tongues scattered droplets on leaves. A captive chameleon may soon die of thirst even with a pan of water in the cage. Do not give sweetened water. A chameleon will soon die on a diet of sugar and water.

Chameleons feed primarily on soft-bodied insects but are fond of spiders also. Captive chameleons may be fed on flies and meal worms or on insects caught in a net swept through rank vegetation. Under ordinary conditions, live meal worms will prove to be the most satisfactory diet, especially as they may be bred or purchased from dealers. Cockroaches have been found acceptable when other insects have been refused. Sowbugs, which are usually found in large numbers around greenhouses, may also be utilized, though they are not especially relished. If chameleons are kept caged during the summer, a small piece of decaying fruit should be placed inside the inclosure to attract flies. Bluebottle flies are not satisfactory food, and continued feeding of these usually results in the death of the chameleon.

## Rearing Meal Worms and Cockroaches for Chameleons

C. F. Hodge says: "Directions in the bird books for raising meal worms are quite misleading; in order to work intelligently we must learn the life story from egg to egg. The first fact to learn is that the insect is single-brooded, that is, it requires an entire season to complete its growth. The beetles may be found laying eggs from May until freezing weather in the fall. The early eggs will produce larvae that are full grown by September or October of the same season; larvae from the late eggs do not attain

their growth until about midsummer of the next season. A female beetle lays from 20 to 50 eggs. While practically any farinaceous material--cornmeal, ground feed, cracker crumbs, or bread crusts--is suitable for their propagation, feeding experiments have proved that wheat, in some form or other, is preferable and yields the best specimens. Fill a tight box or earthen jar half full of the food material, put in scraps of old leather, cover with woolen cloths, and fit with a lid of wire screen. Put in a few hundred larvae or beetles and leave undisturbed, except to insert a raw potato from time to time. If this is done about April, a good supply of larvae will be obtained for use the following fall, winter, or spring."

Methods of raising cockroaches are simple and may be carried on with little trouble. These well-known household pests are several-brooded and require a season to attain maturity. They are usually found around water pipes or insanitary sinks and drains, and under floors that are damp a good part of the time. The eggs are laid in a bean-shaped pod, which for some time during formation remains attached to the body of the female. When starting a colony, select females bearing egg cases. Place a number in a glass or earthen jar that has half an inch or so of moistened paper in the bottom and cover to prevent their escape. Put some bread soaked in sweetened water in the jar occasionally, as feeding experiments have shown that this is preferable and inexpensive. Animal or vegetable grease in nearly any form and fruit also are eaten. Under favorable conditions there will be a good supply of young cockroaches within a month.